In the Claims:

1. (Currently amended) A composition comprising a single-phase liquid or gel comprising nitrous acid, a metal nitrite and an alpha hydroxyl acid or phosphoric acid, wherein:

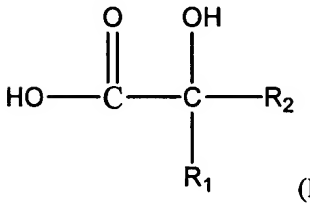
(a) the pH of the composition ~~either remains relatively constant~~ is stabilized at an initial value of around 3.75 or lower, or decreases from said initial value of around 3.75 or lower at the time of formulation to a value as low as around 2.5 over a period of at least about two days~~, preferably about two days to five days~~;

(b) the molar percentage of nitrite ion in the composition in the form of nitrous acid is greater than about 35% but less than about 95% of the total nitrite ions present in the composition, wherein the percent by weight of said metal nitrite in said composition ranges from about 0.01 to about 1.0; and

(c) the composition exhibits cidal activity against microorganisms for a period of at least two months after formulation.

2. A composition of claim 1, wherein the composition comprises a compound comprising an amount of phosphoric acid with a pKa of about 2.15 that is sufficient to lower the pH of the composition to less than about 3.75.

3. A composition of claim 1, wherein the alpha hydroxyl acid is a compound of the formula (I):



(I)

wherein R^1 and R_2^2 may be the same or different and may be selected from the group consisting of hydrogen, methyl, $-CH_2COOH$, $-CH_2COO^-$, $-CH_2OH$, -CHOHCOOH, $-C_6H_5$, and $-CH_2C_6H_5$.

4. (Currently amended) A composition of claim 1, wherein the composition further comprises one or more of the following: a ~~surface active material~~ surfactant, a chelating agent, an effervescent compound, and a thickener.

5. (Currently amended) A composition of claim 1, wherein the cidal activity of the composition over a period of about twenty-four months or more after formulation is ~~comparable to~~ the same or greater than the activity that it demonstrated initially.

6. (Currently amended) A composition of claim 1, wherein the cidal activity of the composition over a period of about five minutes ~~or more~~ to about twenty-six months after formulation is equivalent to the activity necessary to achieve an approximately eight log decrease in a sample of *E. coli.*

7. (Original) A composition of claim 1, wherein the composition is used in conjunction with an application medium.

8. (Currently amended) A composition of claim 1, wherein the nitrous acid is generated ~~by~~ from a metal nitrite.

9. (Original) A composition of claim 1, wherein the composition is a liquid teat dip.

10. (Original) A composition of claim 1, wherein the composition is a gel.

11. (Original) A method comprising disinfecting a substrate by application of a composition of claim 1.

12. (Original) A method of claim 1, wherein the substrate is mammalian tissue.

13. (Original) A method of claim 1, wherein the substrate is a metal surface.

14. (Original) A composition of claim 1, comprising an amount of nitrite in the form of nitrous acid that is no more than about 85% by weight of the total nitrite ions in the composition.

15. (Original) A composition of claim 1, wherein the composition is a disinfecting gel comprising a thickener.

16. (Original) A composition of claim 1, wherein the composition is an oral rinse.

17. (Original) A method comprising maintaining disinfection of a substrate over a period of at least around several months by applying an effective amount of a composition of claim 1 to the substrate.

18. (Original) A method of claim 17, wherein the substrate is mammalian tissue.

19. (Original) A method of claim 17, wherein the substrate is a metal surface.

20. (Original) A composition of claim1, wherein the composition may be sprayed onto a substrate.